

**CLAIMS**

1. Transparent substrate coated with a stack of layers comprising, in succession starting from the substrate, at least:

- a) a first layer of dielectric material,
- b) a first absorbent layer,
- 5 c) an infrared reflective layer,
- d) a second absorbent layer,
- e) a last layer of dielectric material,

the thickness and the nature of the layers being selected such that the stack of layers would provide a 6 mm clear soda-lime glass with:

- 10 i) a light absorption in the range of between 35 and 67%, preferably in the range of between 37 and 60%, and further preferred between 39 and 55%, and
- ii) a reflected colour, with respect to the glass, having a colorimetric index  $a^*$  in the range of between 0 and -10, preferably in the range of between -1 and -8, and a colorimetric index  $b^*$  in the range of  
15 between 0 and -20, preferably in the range of between -1 and -15, and further preferred between -1 and -10.

2. Coated substrate according to the preceding claim, characterised in that it comprises at least two infrared reflective layers disposed in the stack in the  
20 following sequence, starting from the substrate:

- a) a first layer of dielectric material,
- b) a first absorbent layer,
- c) a first infrared reflective layer,
- d) an intermediate layer,
- 25 e) a last infrared reflective layer,
- f) a last absorbent layer,

g) a last layer of dielectric material.

3. Coated substrate according to the preceding claim, characterised in that the intermediate layer comprises a sequence of layers as follows:

- 5           a) a first dielectric layer,  
          b) an infrared reflective layer,  
          c) a second layer of dielectric material.

4. Coated substrate according to any one of the preceding claims, characterised in that it comprises at least one sacrificial layer disposed between an infrared reflective layer and a following layer of dielectric material.

- 10           5. Coated substrate according to any one of the preceding claims, characterised in that the material of the dielectric layers comprises one or more compounds selected from among the following: aluminium oxide ( $\text{AlO}_x$ ), aluminium nitride ( $\text{AlN}_x$ ), aluminium oxynitride ( $\text{AlN}_x\text{O}_y$ ), magnesium oxide ( $\text{MgO}_x$ ), niobium oxide ( $\text{NbO}_x$ ), silicon dioxide ( $\text{SiO}_x$ ), silicon nitride ( $\text{SiN}_x$ ),  
15 titanium dioxide ( $\text{TiO}_x$ ), bismuth oxide ( $\text{BiO}_x$ ), yttrium oxide ( $\text{YO}_x$ ), tin oxide ( $\text{SnO}_x$ ), tantalum oxide ( $\text{TaO}_x$ ), zinc oxide ( $\text{ZnO}_x$ ), zirconium oxide ( $\text{ZrO}_x$ ), zinc stannate ( $\text{ZnSn}_x\text{O}_y$ ) or zinc sulphide ( $\text{ZnS}_x$ ).

6. Coated substrate according to any one of the preceding claims, characterised in that the infrared reflective layer or layers comprises/comprise  
20 silver or an alloy of silver with other metals.

7. Coated substrate according to any one of the preceding claims, characterised in that the material of the absorbent layers is selected from materials having a spectral absorption index on the wavelength of 580 nm ( $k_{580}$ ) higher than 0.8, in particular higher than 1, and further preferred higher than 1.2.

- 25           8. Coated substrate according to any one of the preceding claims, characterised in that the material of the absorbent layers is selected from metals such as titanium, zirconium, stainless steel, niobium, zinc, chromium, nickel, and alloys of these metals or from metal nitrides such as titanium or zirconium nitride.

9. Coated substrate according to any one of the preceding claims, characterised in that the light transmission of the coated substrate is in the range of between 25 and 60%, preferably between 30 and 55%, when the substrate is a 6 mm clear soda-lime glass.

5        10. Coated substrate according to any one of the preceding claims, characterised in that the light reflection with respect to the layer side ( $LR_L$ ) of the coated substrate is less than 30%, preferably in the range of between 8 and 25%, and further preferred between 10 and 20%.

10       11. Coated substrate according to any one of the preceding claims, characterised in that the light reflection with respect to the non coated side ( $LR_N$ ) of the coated substrate is lower than 30%, preferably in the range of between 8 and 23%, and further preferred between 10 and 18%.

15       12. Coated substrate according to any one of the preceding claims, characterised in that the total thickness of the infrared reflective layer or layers is greater than 10 nm, preferably in the range of between 13 and 40 nm, and further preferred between 18 and 35 nm.

20       13. Coated substrate according to any one of the preceding claims, characterised in that the reflected colour, with respect to the glass, has a colorimetric index  $a^*$  in the range of between 0 and -10, preferably in the range of between -1 and -8, and a colorimetric index  $b^*$  in the range of between 0 and -20, preferably in the range of between -1 and -15, and further preferred between -1 and -10.

25       14. Glazing comprising a coated substrate according to any one of the preceding claims, characterised in that it has a solar factor of less than 35%, preferably less than 30%, and further preferred less than 26%.

15. Glazing according to the preceding claim, characterised in that the selectivity (LT/SF) is higher than 1.3, preferably higher than 1.5.

16. Glazing according to either one of Claims 15 and 16, characterised in that the reflected colour with respect to the outside has a colorimetric index  $a^*$  in the range of between 0 and -10, preferably in the range of between -1 and -8, and a colorimetric index  $b^*$  in the range of between 0 and -20, preferably in the range of between -1 and -15, and further preferred between -1 and -10.

17. Glazing according to any one of claim 14 to 16, characterized in that it comprises a coated substrate with a LT comprised between 30 and 55%, a LR, with respect to the non coated side, comprised between 8 and 25% and colorimetric indexes with respect to non coated side,  $a^*$  comprised between 0 and -8 and  $b^*$  comprised between 0 and -20.